

IN THE CLAIMS:

1 1. A method of handling a computer task using an intelligent agent, the
2 method comprising the steps of:

3 (a) based upon an objective criteria, selecting at least one selected program
4 module from a plurality of program modules having varied degrees of domain
5 knowledge, wherein the plurality of program modules are configured to handle a
6 common computer task; and

7 (b) configuring an intelligent agent to execute the at least one selected
8 program module to handle the computer task.

1 2. The method of claim 1, wherein the intelligent agent includes only the
2 selected program module from the plurality of program modules, and wherein the
3 configuring step includes the step of constructing the intelligent agent using the
4 selected program module.

1 3. The method of claim 1, wherein the intelligent agent includes each of the
2 plurality of program modules, and wherein the configuring step includes the step of
3 configuring the intelligent agent to execute only the selected program module to
4 handle the computer task.

1 4. The method of claim 1, wherein the selecting step is performed by the
2 intelligent agent.

1 5. The method of claim 1, wherein the selecting step is performed by an agent
2 manager.

1 6. The method of claim 1, wherein the plurality of program modules are
2 additive program modules, and wherein the selecting step includes the step of selecting
3 a subset of the plurality of program modules to handle the computer task.

1 7. The method of claim 1, wherein the plurality of program modules are
2 alternative program modules, and wherein the selecting step includes the step of
3 selecting only one of the plurality of program modules to handle the computer task.

1 8. The method of claim 1, wherein the selecting step includes the step of
2 adaptively selecting the selected program module using a reinforcement learning
3 algorithm.

1 9. The method of claim 8, further comprising the steps of:
2 (a) obtaining performance information relating to the performance of the
3 selected program module in handling the computer task; and
4 (b) supplying the performance information to the reinforcement learning
5 algorithm.

1 10. The method of claim 8, wherein the reinforcement learning algorithm is
2 implemented in an adaptive heuristic critic neural network.

1 11. The method of claim 1, wherein the selecting step includes the steps of:
2 (a) matching each of the plurality of program modules with a value of the
3 objective criteria;
4 (b) determining a selected value of the objective criteria; and
5 (c) selecting as the selected program module a program module matching the
6 selected value of the objective criteria.

1 12. The method of claim 11, wherein the selecting step further includes the
2 step of retrieving information for a selected computer task, wherein the determining
3 step determines the selected value of the objective criteria using the retrieved
4 information.

1 13. The method of claim 1, wherein the intelligent agent is configured to
2 conduct negotiations in an electronic commerce application, and wherein the domain
3 knowledge for each of the plurality of program modules is related to the autonomy
4 delegated thereto.

1 14. The method of claim 13, wherein the plurality of program modules
2 includes a semi-autonomous program module, a fully-autonomous program module,
3 and a fully-dependent program module.

1 15. The method of claim 13, wherein the objective criteria includes a risk that
2 a dispatched agent is subjected to in negotiations.

1 16. An apparatus for handling a computer task, comprising:
2 an intelligent agent including at least one of a plurality of program modules
3 having varied degrees of domain knowledge, wherein the plurality of program modules
4 are configured to handle a common computer task, and wherein, based upon an
5 objective criteria, at least one selected program module from the plurality of program
6 modules is selected to handle the computer task.

1 17. The apparatus of claim 16, further comprising an evaluation module
2 configured to select the selected program module based upon the objective criteria.

1 18. The apparatus of claim 17, further comprising a reinforcement learning
2 module, coupled to the evaluation module and configured to adaptively select program
3 modules based upon the performance of the plurality of program modules in handling
4 the computer task.

1 19. The apparatus of claim 18, wherein the reinforcement learning module
2 comprises an adaptive heuristic critic neural network.

1 20. The apparatus of claim 17, wherein the evaluation module is configured to
2 retrieve information for a selected computer task, determine a selected value for the
3 objective criteria for the selected computer task, and select as the selected program
4 module one of the plurality of program modules which is matched with the selected
5 value of the objective criteria.

1 21. The apparatus of claim 17, wherein the evaluation module is implemented
2 in an agent manager.

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1 22. The apparatus of claim 17, wherein the evaluation module is implemented
2 in the intelligent agent.

1 23. The apparatus of claim 17, wherein the intelligent agent includes only the
2 selected program module from the plurality of program modules, and wherein the
3 evaluation module is configured to construct the intelligent agent using the selected
4 program module.

1 24. The apparatus of claim 17, wherein the intelligent agent includes each of
2 the plurality of program modules, and wherein the evaluation module is configured to
3 execute only the selected program module to handle the computer task.

1 25. The apparatus of claim 17, wherein the plurality of program modules are
2 additive program modules, and wherein the evaluation module is configured to select a
3 subset of the plurality of program modules to handle the computer task.

1 26. The apparatus of claim 17, wherein the plurality of program modules are
2 alternative program modules, and wherein the evaluation module is configured to
3 select only one of the plurality of program modules to handle the computer task.

1 27. The apparatus of claim 16, wherein the intelligent agent is configured to
2 conduct negotiations in an electronic commerce application, and wherein the domain
3 knowledge for each of the plurality of program modules is related to the autonomy
4 delegated thereto.

1 28. The apparatus of claim 27, wherein the plurality of program modules
2 includes a semi-autonomous program module, a fully-autonomous program module,
3 and a fully-dependent program module.

1 29. The apparatus of claim 27, wherein the objective criteria includes a risk
2 that a dispatched agent is subjected to in negotiations.

1 33. A method of handling a computer task on a remote computer system using
2 an intelligent agent, the method comprising the steps of:

3 (a) determining a risk for the remote computer system;

4 (b) based upon the risk for the remote computer system, selecting at least one
5 selected program module from a plurality of program modules having varied degrees
6 of domain knowledge, wherein the plurality of program modules are configured to
7 handle a common computer task in the remote computer system; and

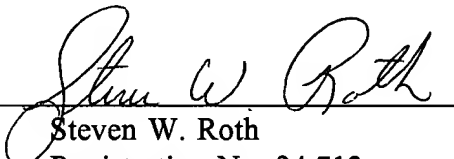
8 (c) configuring an intelligent agent to execute the at least one selected program
9 module to handle the computer task.

1 34. The method of claim 33, further comprising the step of matching each of
2 the plurality of program modules with a risk level.

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1 35. The method of claim 34, wherein the matching step includes the step of
2 adaptively matching each program module based upon the actual performance of the
3 plurality of program modules.

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